E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

VOL. 30 NEW YORK, JANUARY 22, 1959 No. 4

THIS WEEK IN THE MARKETS...

- **American Metal cuts lead 1c—blames barter program and (4c) U.S.-foreign lead differential.**
- **Copper Institute shows further drop in U.S. refined stocks. U.S. sales fair this week.**
- **Tin barter likely. ITC and USSR agree on exports. Zinc sales improve this week.**

COPPER—domestic average 29.020c delivered
export f.o.b. Atlantic seaboard 28.055c
export c.i.f. Continental ports 29.000c

Pricings of U.S. copper were fair this week and pricings outside the U.S. were down from last week. Custom smelter intake of scrap was down in December but improved the past few weeks. They indicate they are in a comfortable position and most sellers doubt custom smelters will change their price. Smelters are paying about 24c for No. 2 scrap depending on delivery time.

Copper Institute data for December (see p 3) show refined stocks in the U.S. down about 13,000 tons and abroad up about 35,000 tons. If London and other prices outside the U.S. remain within 1c of U.S. prices this situation may continue and copper may become extremely short in the U.S. It is much more profitable to sell copper of foreign origin outside the U.S. Copper from U.S. mines and U.S. scrap will not meet the country's needs

The Copper and Brass Research Association is starting an $85,000 market research program.

ALUMINUM—primary pig 24.7c per lb; ingot 26.8c

The U.K. Treasury approved the Reynolds–Tube Investment acquisition of a controlling interest in British Aluminium.

U.S. primary aluminum output in December was 152,301 short tons according to the Aluminum Association. November was 140,962 tons and the total for 1958 was 1,564,341 tons. All six U.S. primary producers are included in the data.

Imported primary aluminum is still available at discounts of 1½c per lb or more but some sellers say many fabricators can get as good a price from primary producers in the U.S. They say primary aluminum is sold freight allowed. Fabricators in some cases are located so as to get their metal by barge which is much cheaper and they make the difference between this charge and rail freight. But more important according to some is that often the fabricator ships his products in his own trucks and rather than bring the truck back empty will pick up primary at a producer's shipping point. His actual shipping cost is almost zero but he will get the freight allowance—we are told some buyers can save over 1c per lb. Some suggest that payment terms of 90 days now permitted is worth $7.50 a ton; they say importers of European metal expect immediate payment.

LEAD—12-13c per lb N.Y.

Late yesterday American Metal Climax announced it was cutting lead to 12c a lb N.Y. It stated it was "forced to reduce by the actions of U.S. Government agencies in connection with the so-called barter program and by the unrealistic differential between the foreign and domestic prices."

Barter business has been disappointing. Including the approximately 5,000 tons Peruvian transaction just accepted (the concentrates to be smelted here) only three significant deals have been accepted.

Merchant sellers had recently dropped their price for imported lead to under 12c on docks in the U.S.

CCC continues to use the U.S. price as the basis for business when the concentrates are smelted here. But proposals involving material smelted abroad are to be related to London prices.

CCC has altered its basis to some extent. Earlier it had thought in terms of the U.S. price less the import duty of 1.06c with delivery to its warehouses—this created a problem in connection with freight since there are a number of widely separated delivery points. It was then suggested a price slightly under the N.Y. price would be paid for material on the docks.

Now the CCC expects to pay about 10.8c for lead smelted abroad. Importers say they cannot do business on these terms. They claim lead costs them about 9c abroad (LME is about 9c) and freight and insurance brings it up almost to 10c. They indicate the agricultural product is charged by CCC at the U.S. going market and that often it can not be sold abroad for 85% of this price. They feel they need more margin in which to cover this discount and other uncertainties such as financing costs.

Lead sales this week were 7,485 tons.

Import quota situation for lead as of Jan. 20 was the following, according to data from the U.S. Customs Bureau:

	Ore		Metal	
Country	entered	quota	entered	quota
Australia	Filled	5,040	3,324	11,840
Canada	1,642	6,720	1,438	7,960
Peru	7,856	8,080	969	6,440
Bolivia	1,580	2,520	...	...
U. of S. Africa	3,938	7,440	...	...
Mexico	...	...	2,707	18,440
Yugoslavia	...	...	2,264	7,880
Others	116	3,280	Filled	3,040

TIN—99¾c a lb, N.Y.

Prices here and in London firmed during the week, owing to some general improvement in demand, and announcement that Russia and ITC had reached an agreement regarding USSR exports. The official figure, yet to be released, is expected to be about 12,000 to 14,000 tons for 1959. It is probable that some metal produced in the U.S. from Indonesian ores will be bartered to the U.S. Government.

IN THIS ISSUE . . .

Copper Institute Data ..... p. 3
I. W. Wilson Addresses NICB ..... p. 3
Watch These Trends ..... p. 7
Daily and Average Prices ..... p. 9

producers of:

Antimonial Lead
Antimony
Antimony Oxide
Arsenic
Bismuth
Cadmium
Cadmium Oxide
Cadmium Sulfide
Copper
Fluorspar
Germanium Concentrates
Gold
Indium
Lead
Lead, Test
Litharge, C. P.
Molybdenum Ore
Nickel Salts
Selenium
Silver
Sulfur Dioxide, Liquid
Sulfuric Acid
Tellurium
Thallium
Thallium Sulfate
Zinc
Zinc Dust
Zinc Sulfate

ASARCO

AMERICAN SMELTING AND REFINING COMPANY
120 BROADWAY, NEW YORK

E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

GEORGE H. CLEAVER.....*Market Editor*
CARL COASH.....*Publisher*

J. R. O'CONNELL JR., *Asst. Market Editor*
ALVIN W. KNOERR.....*Editor*

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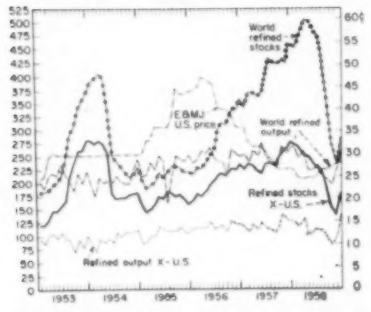
Copper Production and Stocks



Data, except price, are from the Copper Institute and are in thousands of short tons. They include December 1958. World refined output and stocks do not include the U.S.S.R., Japan, the Scandinavian countries, Australia, Yugoslavia, and the Mesina Mine in Transvaal. The two series "X-U.S." are the above world producer statistics less the U.S. No fabricator stocks are included.

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U.S. Refined Copper Stocks Fall; Foreign Output High

World refined stocks were 22,100 tons greater at the end of December than the previous month, with metal produced outside of the U.S. responsible, according to Copper Institute data.

U.S. crude primary production was about unchanged. Though down from November's peak, shipments were still enough above output to drive U.S. refined stocks down 12,874 tons. The huge refined output here in December reflected large amounts of foreign ore refined here prior to delivery outside the U.S.

Crude primary production outside the U.S. increased 24,000 tons in December; deliveries were up nearly 15,000 tons; and stocks increased about 35,000 tons.

Copper Institute figures for November and December 1958 follow:

		Nov.	Dec.
United States			
Production:			
Crude primary	(a)	96,369	97,618
Crude secondary	(a)	16,775	7,722
Total	(a)	113,144	105,340
Refined copper		128,048	146,978
Deliveries refined		131,288	116,310
Stock, end, ref'd		93,596	80,722
Outside United States			
Production:			
Crude primary	(a)	131,547	155,881
Crude secondary ...		980	972
Total	(a)	132,527	156,873
Refined copper		102,061	135,213
Deliveries refined	(a)	129,909	144,531
Stock, end. ref'd		143,178	178,152

(a) Revised

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Malay Tin Shipments in 1958 Lowest in 10 Years

Kuala Lumpur (McGraw-Hill World News): The drastic cutting of Malay's permissible tin exports last year, under the International Tin Agreement, resulted in shipments at 45,695 tons being the lowest for over 10 years.

Figures issued showed that 1958 exports were down 35% compared to 1957.

During the month of December exports fell to their lowest for years totaling 1,782 tons.

This was a drop of 57% in November and was the result of December being the last month of the quota period.

There is no doubt that the international restriction received a heavy blow from the Russian sales of the metal in the middle of last year and this is now being felt in retrospect.

There is more tin in the buffer stock than there would have been without the Russian sales and the £781 per ton level at which the buffer stock manager is authorized to sell still seems way off.

Wilson Sees Aluminum, Copper Shipments Up Better Than 10%

I. W. Wilson, chairman of the board, Aluminum Co. of America, today told members of the National Industrial Conference Board that indicators pointed to improved shipments in 1959 of the four major nonferrous metals: aluminum, copper, lead and zinc.

The following remarks were taken from Wilson's speech, given at the initial session of NICB's 391st Meeting at the Hotel Commodore here.

Most industry observers are optimistic about the outlook for aluminum during 1959. Predictions on estimated shipments of aluminum products to consuming industries range from 10 to about 25% higher this year than last. The Business and Defense Services Administration of the Department of Commerce has forecast a substantial rise in shipments based on the fact that in periods of rising industrial activity, such as in 1953 and 1955, aluminum has increased at a rate about 2½ to 3 times the percentage increase in over-all industrial production. At this rate, if the Federal Reserve Board's index averages 145 or 146 in 1959, a gain of approximately 8 or 9% over 1958, aluminum shipments to consumers would increase from 20 to 27%. BDSA cites 20% as a reasonable expectation, with 24% a possibility. We at Alcoa feel certain that the 1959 gain in aluminum consumption will be a minimum of 10% above last year and could easily be 15 to 20% higher. We tend to be guardedly optimistic for the simple reason that the presence of abundant primary capacity may act as a deterrent to large inventory accumulations by fabricators, a practice which occurred during previous recovery periods. However, we are confident that consumption of aluminum will soon resume the upward growth trend prevailing in the years prior to the 1957-58 recession, when shipments of aluminum grew at a much faster rate than the nation's over-all economy.

Prices for aluminum and aluminum products are expected to remain relatively stable until mid-1959. All the domestic primary producers and the largest importer have announced that published prices in effect in December would apply to all aluminum orders shipped through June 30, 1959. As you are probably all aware, the 3-year contracts signed by the primary producers and the major labor unions in 1956 will be terminating shortly thereafter. Obviously, prices for the second half of the year will depend to some degree upon the outcome of the new negotiations. Some indications of the trend in bargaining which will take place in the aluminum industry can be gained from observing progress in the steel industry where 3-year contracts terminate a month earlier.

The year 1958 was a difficult one with regard to profit margins in the aluminum industry. Primary metal prices fell and costs rose. With supply in excess of demand, severe price competition in fabricated products was prevalent among

(Continued on page 11)

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Tel: YUkon 2-0565

International Minerals and Metals Corporation

11 BROADWAY, NEW YORK 4, N. Y.

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COPPER, ZINC

BUYERS

ORES, CONCENTRATES
SCRAP, RESIDUES
FOR PHELPS DODGE PLANTS
in Laurel Hill, L. I., N. Y.
Douglas, Arizona — El Paso, Texas
FOR NATIONAL ZINC COMPANY
(Subsidiary)
Bartlesville, Oklahoma

SELLERS

COPPER (ELECTROLYTIC)
CADMIUM
ZINC AND BY-PRODUCTS
MERCURY

Wolverine Tube Begins Output Of Columbium Extrusions

Commercial production of extrusions made from columbium was announced by Wolverine Tube, division of Calumet and Hecla Inc.

Columbium is an important construction material for rocket and missile components as well as for atomic power plants, because of its rich strength at high temperatures and because of its nuclear properties.

The commercially successful extrusion process was developed by Wolverine engineers in cooperation with Wah Chang Corp., Albany, Oregon, which supplied the ingots as well as basic data on the metal's characteristics. In the past, the presence of small amounts of impurities in the metal prevented exploitation of its desirable strength and nuclear properties.

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Poland Begins Sulphur Output

Vienna (McGraw-Hill World News): The first metric ton of Polish sulphur was mined and delivered to the processing plant during December's second half, according to a note in Glos Pracy, a Warsaw daily.

The sulphur, mined in Ogorzelec, was shipped to the "Ubocz" phosphorous fertilizer factory of Lower Silesia; daily flow to the processing center is to reach 40 metric tons. The quality of the Polish-mined sulphur is claimed to be equal to the imported material, originating in the Chinese Peoples Republic.

An experimental concentration station has been set up at the mining site, but only little pure sulphur has been derived so far. The first rectifying stations are now under construction there, scheduled to yield the first 100 metric tons of pure sulphur during the first quarter of 1960. The annual yield is to increase to 1,000 metric tons in 1960.

The other processing station, the "Ubocz", now processes 1,200 metric tons of Chinese sulphur per annum, and 120 metric tons of sulphuric acid every 24 hours. The plant will gradually increase the processing of domestically-mined sulphur simultaneously with decreasing processing of Chinese material. The factory reported on Dec. 29, 1958 that the production cost for sulphuric acid was reduced by 140 Zloty ($35.00) per metric ton, mainly because of the reduction in the use of nitrogen acid in processing, and the full utilization of the furnace capacities.

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Bruce to Aluminium Board

The election of Fraser W. Bruce, Montreal, to the board of directors of Aluminium Ltd. has been announced.

Bruce is president of the company's principal subsidiary, Aluminum Co. of Canada Ltd.

He fills a vacancy on the board created by the resignation of Elmer G. MacDowell, former vice president and chief sales management officer of Aluminium Ltd., who has retired after 44 years in the aluminum industry.

Miscellaneous Metals

Wholesale lots, (a) f.o.b. ship. pt.; (b) delivered; (c) f.o.b. N.Y.; (d) Dep. on size of lot; (n) nom.

ALUMINUM: lb (b) eff. 8-4-58, ingot:
99.50%.....26.8c 99.80%.....27.8c
99.75%.....27.3c 99.85%.....28.8c

ANTIMONY: dom, lb., Jan. 15-Jan. 21
boxed N.Y. (c) 32.590c
bulk (a) 29c
boxed (a) 29½c
imported 10-ton lots, 99½%, duty pd. ..24c
99% 23c

BISMUTH: lb, ton lots $2.25

CADMIUM: lb (b) Jan. 15-Jan. 21....$1.45

CALCIUM: lb, ton lots, slabs, etc. $2.05

CHROMIUM: (b) lb of material,
exo. 98.5%, .05%C, ...(d)$1.15-1.19
Elec. 99.8% .....(d)$1.15-1.19
Vacuum melting .....4c more

COBALT: lb, (c), eff. 2-1-57
500 lb lots $2.00
100 lb $2.02
less than 100 lb $2.07
fines $2.00

COLUMBIUM: lb, 99½%, (d)
roundels $55-70
electrode segments $60-75
rough ingots $65-80

GALLIUM: gr, 1000-gr lots $3.00
less than 1000-gr lots $3.25

GERMANIUM: gr
1000-gr lots, 1st red .....40c(b)&43½c(a)
intrinsic .....44½c(b)&48½c(a)
10,000-gr lots, 1st red .....37c(a)&38c(b)
intrinsic .....39c(a)&40.2c(b)

INDIUM: tr oz, 99.9%, small lots $2.25
over 5,000 oz $1.25-2.25

IRIDIUM: tr oz $70-80

LITHIUM: lb 99.5% $9-11

MAGNESIUM: lb (a) 10,000 lb lots,
pig ingot 99.8% 35¼c-36.65c
notched ingot 36c-37.45c

MANGANESE: lb (b) 95½%, carloads,
bulk 45c
packed 45¾c
elec (a) frt. allowed E. of Miss., 99.9%..34c
ton lots eff. 4-1-57 .....36c
prem for hydrogen removed .....¾c lb

MOLYBDENUM: (a) eff. 8-56
powder, carbon red $3.35

NICKEL: lb (a) duty included 74c
eff. 12-6-56
dealers 74c
powder (b) U.S. 74c
sinter (nickel content) point of entry,
eff. 7-14-58 .....69.6c

OSMIUM: oz (n) $70-90

PALLADIUM: tr oz eff. 7-23-58 ....$15-17

PLATINUM: tr oz $51-55
average $52

QUICKSILVER: flask, N.Y. $218-23

RADIUM: mg, Ra content $16-21½

RHODIUM: tr oz $118-125

RUTHENIUM: tr oz $45-55

SELENIUM: lb, 2-19-58, comm. grade $7
high purity $9.50

SILICON: lb (a) eff. 10-1-58
98% max .51-1.0% Fe, crushed 23.35c
lump 21.50c
Hyper-pure: (4-1-57) #1.....$360
#2.....$250
#3.....$160
solar cell (4-1-57) $100

SODIUM: lb, carloads 16½c
less than carloads 17c

TANTALUM: kilo (2.2 lb), rod $128
sheet $100

TELLURIUM: lb $1.65-1.75

THALLIUM: lb $7.50

TITANIUM: lb (a) A-1 99.3%
max. .3% Fe .....$1.62-$1.82
max. .5%, Fe. eff. 10-1-58 .....$1.70

TUNGSTEN: lb 98.8%
1000-lb lots (8-1-57) $3.05-3.20
Hydrogen red 99.99% $3.33-3.80
dep. on Fisher No. eff. 5-26-58

VANADIUM: lb, 90% V 100 lb lots ..$3.65

ZIRCONIUM: lb (a) sponge, powder
platelets: low hafnium $7-14
comm.....$5-10

Metallic Ores

Tons of 2000 lb or units of 20 lb, unless otherwise stated. Short ton unit=stu; long ton unit=ltu. (a) c.i.f. U. S. ports, (b) f.o.b. ship pt., (c) f.o.b. mine or mill (g) depending on grade, (i) import duty extra, (n) nominal, (t) term contracts.

ANTIMONY ORE: stu of Sb:
50-55% ..... $2.25-$2.40
60% ..... $2.50-$2.60
65% Lump ..... $3.10-$3.20

BERYLLIUM ORE: stu BeO, 10-12%:
Dom. (c)—dep. on quan. ..... $46-$48
Imported (a) ..... (n) $28-$31

CHROME ORE: lt, dry basis, subject to penalties if guarantees are not met, f.o.b. cars, Atlantic ports
Rhodesian: (t)
48% Cr_2O_3, 3 to 1 ratio ..... (n) $40-$42
48% Cr_2O_3, 2.8 to 1 ratio ..... (n) $37-$39
48% Cr_2O_3, no ratio ..... (n) $28-$30
South African (Transvaal):
48% Cr_2O_3, no ratio ..... $30-$32
44% Cr_2O_3, no ratio ..... $19-$20
Turkish (basis 48% 3 to 1):
48% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... (n)
48% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... (n)
Pakistan (Baluchistan):
48% Cr_2O_3, 3 to 1 ratio ..... (n)

COBALT ORE: lb Co, free market, (b):
10% 60c
11% 70c
12% 80c

COLUMBITE ORE: lb pentoxide, 65% Cb_2O_5 and Ta_2O_5:
Ratio 10:1 ..... $1.05-$1.10
Ratio 8½:1 ..... $ .95-$1.00

IRON ORE: lt, lower lake ports, Lake Superior ore; 1958:
Bessemer
Mesabi 51½% Fe $11.60
Old Range $11.85
Non-Bessemer
Mesabi 51½% Fe $11.45
Old Range $11.70
Eastern ores, ltu, delivered, foundry and basic, 58-62% 17c-18c
Swedish (t) (a) 60-68%, stu, (g) .... (n)
Brazilian (b) 68½%, gross ton, premium for low P, 1-1&4-1-58..... $14.60
Smaller sellers ..... $11.50-$12.00

MANGANESE ORE: Indian, (a), (i), ltu Mn, 46-48%
(see 11-27-58, p. 12)..... (n) $.915-$.965
max. 2% Fe, ... (n)
dioxide, 84%, MnO_2, lt bulk, crude (a) ..... $110-$120

MOLYBDENUM ORE: lb cont. Mo.:
95% MoS_2 (b): (Eff. Nov.1, 1958)
Climax, cost of container extra $1.25
Molybdic trioxide MoO_3, bags (b) ... $1.46
cans $1.47

TITANIUM ORE: Ilmenite, gross ton:
TiO_2, 59½%, f.o.b. cars, Atlantic ports ..... $23-$26
54%, f.o.b. cars ..... $21-$21.50
Rutile, 94%, st, for del. within 12 mos. ..... $95-$100

TUNGSTEN ORE: stu WO_3, 65% basis:
foreign ore, nearby arrival (a), (i):
Wolfram $12
Scheelite $12
Low moly scheelite, higher.
U. S. scheelite, stu. (c) ..... $20-(n) $22
London, ltu, WO_3, good ore:
Wolfram 90s-97½s

VANADIUM ORE: lb V_2O_5 cont., (c):
Domestic 31c

ZIRCON ORE: (sand), lt, (a) Atlantic:
65% ZrO_2 ..... $46-$48
Domestic 66%, st, (b):
Jacksonville $41
Stark, Fla. $42

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MANGANESE ORES • Metallurgical • Chemical
IRON ORES • Open hearth • Blast furnace

Rolled Metals, Etc.

BRASS — Cents per lb (base prices)

	Sheet	Wire	Rods
Yellow Brass	46.57	47.11	46.51
Best quality brass ..	47.95	48.49	47.89
Red brass 80%	49.23	49.47	49.17
Red brass 85%	50.17	50.71	50.11
Com'l bronze 90% ..	51.65	52.19	51.59
Gilding metal	52.60	53.14	52.54

Eff. Dec. 1

COPPER — per lb Sheets, over 20 in. wide, 53.13c, rolls 20 in. and under, 51.16c. Wire, bare, carload lots f.o.b. mills 34.35c, eff. Oct. 21, 1958.

LEAD SHEETS — Per lb, full rolled, 140 sq ft 18½c.

MONEL METAL — Per lb (base prices) Standard cold-rolled sheet, 97c; cold-rolled strip, 99c Rods, hot-rolled 80c.

NICKEL — Per lb (base prices) sheets. cold-rolled, $1.13; rods, hot-rolled, 94c.

NICKEL SILVER — Per lb. sheets, 10% 62.20c; 18% 66.85c; wire and rods, 10% 64.53c.

Metallic Compounds

ANTIMONY TRIOXIDE — Per lb, carload lots, 50-lb bags; 24c f.o.b. shipping point; less than carload lots, 26c Eff. Dec. 6.

COPPER SULPHATE — Per lb, in carload lots, $11.65, per 100 lb, crystals or diamond f.o.b. ref'y, eff. Oct. 24, 1958.

COBALT OXIDE — Ceramic grade 72½ to 73½% Co, $1.52 per lb east of Mississippi, and $1.55 per lb west of Mississippi. Grade 70% to 71%, $1.48@$1.51. Quotations are for oxide packed in 350-lb containers. Eff. Feb. 1, 1957.

ARSENIOUS OXIDE (arsenic trioxide), refined, white min. 99%, per lb, 5½c, in barrels carload lots delivered. F.o.b. Laredo, Texas, 4½c; on N.Y. docks, 5c.

GERMANIUM OXIDE — Per gm, 27½c.

Ferroalloys

(a) carload lots; (b) delivered; (c) lump, bulk; (d) f.o.b. shipping point; (n) nominal

FERROCHROMIUM: lb contained Cr; (a) (b) (c) cont. U.S.
High carbon (4-9% C, 65-70% Cr) ..... 28.75¢
Cr) ..... 28.75¢
Low carbon (0.10% C, 67-72% Cr) eff. Oct. 1, 1957 ..... 38.50¢
Special (0.01% C, 63-66% Cr) eff. Oct. 1, 1957 ..... 37.75¢

FERROCOLUMBIUM: lb contained Cb; ton lots, lump (2 in) packed; (b) cont. U.S.—(50-60% Cb, max 0.40% C, max 8% Si) $4.00

FERROMANGANESE: lb (a), (c), (d) (74-76% Mn)
Standard, eff. Sept. 19, 1957 ..... 12.25¢
Medium Carbon- lb contained Mn; (a), (c), f.o.b. U.S. — (80-85% Mn, 1¼-1½% C) ..... 25.50¢
Low carbon-basis as for Med. Carbon- (85-90% Mn, Max, 0.07% C) .... 35.10¢

FERROMOLYBDENUM: lb Mo; lots 5000 lb or more, (d) (58-64% Mo) powdered, packed $1.82
Other sizes, packed $1.76
Calcium Molybdate (CaO MoO3) lump, packed $1.50

FERROPHOSPHORUS: per gross ton; (a), (c), (max 6 in.); (d) (equivalent to Tenn.) (23-26% P) $110
plus $4 per 1% above or below 24%.

FERROSILICON: lb contained Si; (a), (c), (d) (50% Si) ..... 41.60¢

FERROTITANIUM: low carbon — lb contained Ti; ton or more lots, lump (½ in.), packed, f.o.b. dest. NE U.S. — (40% Ti, max 0.10% C) $1.35
(25% Ti, max 0.10% C) $1.50
Medium Carbon — net ton; (a), lump, packed; f.o.b. dest. NE U.S. — (17 to 21% Ti, 3-5% C) $290-5
High carbon — basis as for Med. carbon — (15 to 19% Ti, 6 to 8% C)..$240-5

FERROTUNGSTEN: lb contained W; lots of 5,000 lb or more, lump (¼ in.), packed; f.o.b. dest. cont. U.S.—(70-80% W) (n) $2.15

FERROVANADIUM: lb V; (a), var. sizes, packed; f.o.b. U.S. — (50-55% V)
open hearth $3.20
crucible $3.30
high speed $3.40

SILICOMANGANESE: lb; (a), (c), (d).
(1.5% C max 18-20%) Si ..... 12.80¢
(2% C max 15-17½% Si) ..... 12.60¢
(3% C max 12-14½% Si) ..... 12.40¢

SPIEGELEISEN: per gross ton; (a), (c) f.o.b. Palmerton, Pa.
3% max Si, 16-19% Mn $100.50
3% max Si, 19-21% Mn $102.50
3% max Si, 21-23% Mn $105.00
Eff. on orders of Jan. 7, 1957

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WATCH THESE TRENDS

HIGH PURITY METALS are being produced by electron beam melting in the presence of a high vacuum in the order of 0.01 to 0.1 μ at Stauffer-Temescal Co.'s Richmond, Cal. plant. So far, titanium, zirconium, tungsten, tantalum, molybdenum, beryllium and columbium have been refined to a high purity state.

Heat to melt the metal being refined is supplied by an electron gun powered by a cheap, high efficiency, high voltage dc power source. The gun serves as the cathode while the melting stock serves as the anode. As the metal melts, it flows into a holding crucible below, and impurities are boiled off into the vacuum – carbon, hydrogen, oxygen, and any others which form compounds having at least 10^{-5} vapor pressure.

Process advantages are low production cost and pure products with new market potential. There seems to be no fixed limit on how large an ingot that can be drawn from the bottom of the holding crucible. Power requirements for columbium metal are only 3 to 4 kwh/lb, for tantalum only 6 to 8. Columbium refined by electron beam melting is ductile – one customer is cold rolling Stauffer-Temescal columbium to 1.2 mil sheet from 3-in. ingots without annealing. Licenses are available.

NOVEL CERAMIC-METAL ALLOYS are being produced on an experimental basis at Denver Research Institute where the metallurgical division, under James P. Blackledge, director, has found that a copper-soluble ceramic (thorium boride) can be added to a molten copper, then chilled rapidly to yield an alloy that is harder than copper metal at elevated temperatures. A similar case was cited for aluminum-ceramic alloy (thorium silicide) being stronger than aluminum metal at 1,000 deg F.

Molten thorium and molten boron are mixed with molten copper and the alloy chilled rapidly to prevent stratification. Ceramic-copper alloy produced had an ultimate yield strength four times that of copper metal at 1,800 deg F. Ductility was only 30 to 40% that of copper.

GENERAL MOTOR'S gas turbine in the experimental Firebird III is signed up for tests in a Cadillac-built M-56 lightweight tank and in a heavy-duty Chevrolet truck. Cost analysis shows that the GT-305 engine can be built in production quantities at a price that is no higher than that for an equivalent powered reciprocating engine. Past history of the gas turbine shows significant fuel economies – 0.55 lb of fuel per horsepower hour for GM's GT-305. Officials predict that a future model may be more economical than the best diesel engine-torque converter combination. Wide-spread use of the gas turbine engine in the transportation field could bring about tremendous change in the types and amounts of metals and alloys purchased by the auto industry.

MOLYBDENUM has been cast for the first time at the U.S. Bureau of Mines, Albany, Ore. station according to a report released January 16 by the Department of Interior.

NORMAL AUSTENITIC manganese steel (containing 12% or more manganese) can be cold work hardened better, faster and in more intricate forms with the use of the proper sheet explosive than it can with conventional shot peening, hammering or pressing techniques, according to a two-page article in January *Engineering & Mining Journal* which features a report on the "Explosive Hardening of Manganese Steel" as developed by the E. I. du Pont de Nemours & Co., Wilmington 98, Dela. Explosive comes in sheet much like floor tile and is cut with a knife to be glued to any shape. The explosive is then fired with electric blasting cap under the supervision of a trained explosives engineer to harden the steel. Taylor-Wharton Co., Easton, Pa. is already using the method commercially.

1958 Sheet, Scrap Mica Output Dipped About 11%

The 1958 output of sheet and scrap mica as estimated by the U.S. Bureau of Mines, reached about 82,300 short tons valued at about $3,664,000.

This represented a decrease of about 11% in quantity and 20% in value compared with 1957. North Carolina continued to be the principal producing State. New Hampshire, Maine, South Dakota, and Georgia were other leading producers of sheet mica; Georgia, Alabama, and South Carolina were other major producers of scrap mica. Total imports estimated at about 10,000 tons in 1958, and exports of 4,500 tons represented decreases of about 16% and 10%, respectively, from the previous year's total.

The Defense Minerals Exploration Administration (DMEA) program of financial assistance for the exploration of unknown or undeveloped sources of strategic mica expired on June 30, 1958. This program began in 1951 and during its period of operation certificates of discovery or development were issued on 66 contracts which had a total value of $484,949.

Fourteen contracts were still in force on June 30, 1958.

The Office of Minerals Exploration (OME), which was established in September 1958 by the Department of the Interior, succeeded DMEA and assumed responsibility for the DMEA contracts still in force and for each project certified by DMEA as a discovery or development. The OME program, which will be activated in January 1959, differs from the DMEA program in several respects. Under OME the applicant must provide evidence that funds cannot be obtained from commercial sources; interest is charged from the dates Federal funds are disbursed; and Government participation in any one contract may not exceed $250,000.

The synthetic mica research program of the Bureau of Mines and industry continued through 1958 with efforts directed largely toward the growth of larger single crystals, the development of a useful reconstituted synthetic mica sheet, and the determination of the basic properties of synthetic mica.

The Government, through the Defense Materials Service of General Services Administration (GSA), continued to purchase domestic sheet mica for the strategic stockpile. Two revisions in the program, which were of great assistance to the miners, were made during 1958. First, the time limit to apply for a participation certificate for Government assistance, which was to expire on June 30, 1958, was eliminated. Second, the purchasing program was changed to give the miner or participant a choice of three methods for marketing his product. These changes were largely responsible, it was believed, for the increased purchases of domestic mica for the stockpile during the last quarter of 1958.

The tariff on all imports of unmanufactured mica, regardless of value, was greatly reduced during the year and in addition mica films and splittings not cut or stamped to dimensions were put on the free list. An increase in the number of import contracts signed by GSA during the last quarter was noted.

After several years of development work the International Minerals & Chemical Corp. began production in 1958 of flake mica from river silt near Greenville, Tenn. This is reported to be the largest known source of flake mica in the United States containing more than half a million tons of recoverable mica and the only operation in which mica has been commercially recovered from river silt.

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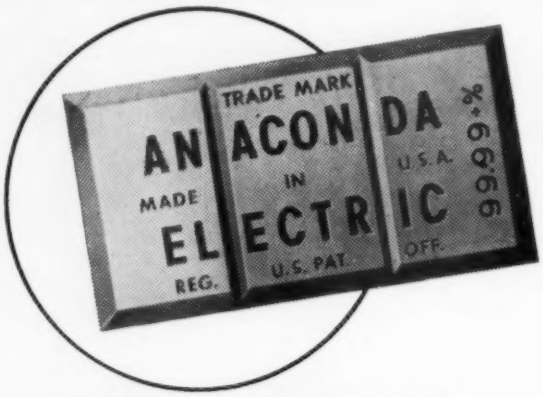

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Steel Facilities Ran at 60.6% of Capacity in '58

Steelmaking furnaces produced 85,257,363 net tons of ingots and steel for castings in the United States during 1958, according to a preliminary report of American Iron and Steel Institute.

December output, totaling 8,713,000 net tons, was the second highest of 1958, exceeded only by the 8.8-million tons produced in October. The November figure was 8,569,318 tons.

The fourth quarter production, 26,122,096 tons, exceeded the total for any other quarter in 1958 and was above the output of the fourth quarter of 1957, (25,010,921 tons).

During the second half of 1958, the steelmaking furnaces poured 47,504,876 tons of raw steel, compared with 37,752,487 tons in the first half of the year and 52,131,449 tons in the second half of 1957.

According to American Iron and Steel Institute's index of steelmaking, the December output was 122.5 in terms of the basic index of average production during the period 1947-1949. This compared with 124.5 during November 1958 and 104.3 in December 1957. For the year 1958, the index was 101.8, against 134.6 during 1957.

Based on the Jan. 1, 1958 capacity rating of 140,742,570 net tons of steel annually, the steelmaking facilities were utilized at an average of 72.9% of capacity during December, 73.6% in fourth quarter, 67.0% in the second half of 1958, and 60.6% for the entire year.

E&MJ QUOTATIONS

Daily Prices of Metals

Jan.	COPPER ELECTROLYTIC Domestic Refinery	COPPER ELECTROLYTIC Export Refinery	LEAD New York	LEAD St. Louis	ZINC (b) Delivered (a)	ZINC (b) East St. Louis	ALUMINUM Primary Pig 99%	TIN Straits New York
15	28.600	28.075	13.000	12.800	12.000	11.500	24.700	98.750
16	28.625	28.225	13.000	12.800	12.000	11.500	24.700	99.125
19	28.625	28.175	13.000	12.800	12.000	11.500	24.700	99.625
20	28.625	27.850	13.000	12.800	12.000	11.500	24.700	99.750
21	28.625	27.950	13.000	12.800	12.000	11.500	24.700	99.750
Averages	28.620	28.055	13.000	12.800	12.000	11.500	24.700	99.400
Europe, c.i.f.		29.000						
Calendar Wk. Avgs.								
Jan. 12-16	28.610	27.945	13.000	12.800	12.000	11.500	24.700	98.975

(a) Prime Western Zinc sold on delivered basis at centers where freight from East St. Louis exceeds one-half cent a pound.

The above quotations are our appraisal of the major United States markets, based on sales reported by producers and their agencies. They represent payments received by producers for the product. They are reduced to the basis of cash, New York or St. Louis, as noted. Prices in cents per pound.

Copper, lead and zinc quotations are based on sales for prompt and future deliveries; aluminum weighted average prices are based on estimated sales and announced prices; tin quotations are for prompt delivery only.

COPPER prices, domestic, in the trade are quoted on a delivered basis, that is, delivered at consumer's plants. Delivery costs vary with the destination. The above prices are net prices at the refineries; the average shipment cost is deducted in order to arrive at a refinery price. Beginning Jan. 2, 1957, the average differential between delivered and f.o.b. prices is taken as 0.400c per lb.

COPPER quotations, foreign or export, reflect prices obtaining in the open market and are based on sales in the foreign market reduced to the f.o.b. refinery equivalent, Atlantic seaboard. On f.a.s. transactions, eff. Jan. 2, 1957, we deduct 0.125c for lighterage, etc., to arrive at the f.o.b. refinery quotation.

COPPER quotations are for ordinary forms of wirebars and ingot bars. The premiums on special shapes, effective in some instances on deliveries beginning Sept. 1, 1955, are: Standard ingots 0.35c per pound; slabs 0.55c and up, cakes 0.6c and up, depending on weight and dimensions; billets 1.725c and up, depending on dimensions and quality. Discount on cathodes 0.125c to 0.15c per pound.

ZINC quotations reflect sales of the Prime Western grade as well as sales of other grades when sold on a Prime Western basis. (b) Zinc premiums . . . obtaining over Prime Western zinc in the East St. Louis market on the following grades, in cents per pound: Selected 0.10c; Brass Special 0.25c; Intermediate 0.5c. High Grade zinc sold on contract, delivered to the consumers' plants, commands a premium of 1c per lb, eff. Apr. 9, 1958, over the East St. Louis basis for Prime Western: Special High Grade premium or differential is 1.35c per lb, eff. Apr. 9, 1958.

LEAD quotations are for the common grade, and are based on sales of domestically refined metal sold to domestic consumers. The differential on sales in the Chicago district is 15 points under New York; for California 20 points under New York; for New England add 7½ points to the New York basis. Corroding grade commands a premium over common lead of 10 points.

ALUMINUM quotations refer to primary pig, 99%, delivered to consumers. The U.S. primary producers as well as the major exporter of primary aluminum to the U.S., quote prices delivered to consumers in the U.S. The weights are estimated on the basis of daily average primary capacity in those cases where daily sales or shipments are not available. Ingot sales by primary producers, reduced to the pig price, are included in calculating the quotation. The premium on standard ingots 99 + % is 2.1c per lb.

Note: The daily quotations for copper, lead and zinc are weighted averages of sales reported to *E&MJ;* weekly averages are arithmetical averages of the daily quotations; monthly averages are the arithmetical averages of the daily quotations.

Silver, Gold, and Sterling Exchange

Jan.	Silver N.Y.	Silver London	Sterling Exchange	London Gold (a)
15	90.125	76.125d.	280.5625	249s. 11½d.
16	90.125	76.125d.	280.6250	249s. 10¾d.
19	90.125	76.125d.	280.6875	250s. 0d.
20	90.375	76.125d.	280.6875	250s. ¼d.
21	90.375	76.375d.	280.6875	249s. 11¼d.
Av.	90.225	—	280.650	—
Calendar Wk. Avgs.				
Jan. 12-16	90.125	—	280.535	(a) Open Market

The daily silver quotation reported by Handy & Harman, in cents and fractions of a cent per troy ounce, is the price paid by Handy & Harman in settlement for silver contained in unrefined silverbearing materials submitted to them for refining. It is determined on the basis of offers of bar silver .999 fine as made to Handy & Harman for nearby delivery at New York by regular suppliers in quantities sufficient to meet daily requirements, and it is usually one quarter cent below the price at which such offers are made.

The Treasury's purchase price of newly mined domestic silver was established at 90.5c per troy ounce, 1000 fine, effective on July 1, 1946 under an amendment to the Silver Purchase Act of July 6, 1939.

London silver quotations are in pence per troy ounce, basis .999 fine.

London gold quotations are per troy ounce, basis 1000 fine.

Sterling, in cents, noon buying rate for cable transfers as certified by the Federal Reserve Bank of New York, for customs purposes.

Aluminum Alloys Secondary Jan. 15-21

	Tons	Price/lb
No. 13	53	24.54c
No. 43	41	24.61c
No. 360	16	24.77c
No. 380		
1% Zn	1372	21.76c
2% Zn	23	21.25c
3% Zn	116	20.76c

The secondary aluminum alloy prices are weighted average prices calculated from reports by secondary aluminum producers of the prices and quantities of their sales.

London Metal Exchange

Jan.	COPPER Cash Bid	COPPER Cash Asked	COPPER 3 Mo. Bid	COPPER 3 Mo. Asked	LEAD Current Month Bid	LEAD Current Month Asked	LEAD 3 Mo. Bid	LEAD 3 Mo. Asked	ZINC Current Month Bid	ZINC Current Month Asked	ZINC 3 Mo. Bid	ZINC 3 Mo. Asked	TIN Cash Bid	TIN Cash Asked	TIN 3 Mo. Bid	TIN 3 Mo. Asked
15	229	229¼	226	226¼	70	70¼	71½	71⅝	75¼	75½	73¼	73½	756	756½	757	757½
16	231½	231¾	227½	227¾	71½	71⅝	71¾	72	75¼	75⅝	73½	73¾	757½	758	758½	759
19	230¾	231	227½	227¾	71½	71¾	71⅞	72	75¼	75½	73¼	73¾	760	761	760	761
20	228½	228¾	225½	225¾	71¼	71½	71½	71¾	75	75¼	73	73¼	762½	763	763	763½
21	230¼	230½	227¼	227½	71⅜	71¾	71⅞	72	74⅝	74⅞	73¼	73½	763	763½	762½	763

Prices are for the official a.m. session in pounds sterling per ton of 2240 lb. Copper basis electrolytic and fire refined wire bars, lead 99.97%, zinc 98% and tin min. 99.75%.

THIS WEEK'S BUSINESS INDICATORS

	Latest Week	Preceding Week	Month Ago	Year Ago	Net Change Year Ago
Steel Rate (% of capacity in operation)	(d) 75.8	(a) 74.6	68.0	55.3	+20.5
Steel Ingot Production, thousands of tons	(d) 2,147	(a) 2,111	1,840	1,496	+651
Automobile Production (cars and trucks)	(d) 164,067	(a) 165,011	157,275	136,505	+27,562
Electric Power Output (millions kwh.)	13,554	12,364	13,534	12,506	+1,048
Engr'g Const. Awards, 4-week daily av., in thousands (c)	$50,953	$47,600	$56,327	$39,504	+$11,449
Federal Reserve Index of Industrial Production (e)	142 Dec.	....	141	136	+6
E&MJ Index of Nonferrous Metal Prices (e)	183.95 Dec.	....	184.05	174.42	+9.53
All Commodities, Bureau of Labor Statistics (b)	(d) 119.1 Dec.	....	119.2	118.4	+.7

(a) Revised. (b) 100 is composite of 1922-3-4. (c) From Eng. News-Record. (d) Preliminary. (e) Base period 1947-49

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Platinum-Group Sales Were 23% Better in Third Quarter

Sales of platinum-group metals to domestic consumers in the third quarter of 1958 increased 48% over those of the preceding quarter and were 29% higher than in the corresponding period of last year, according to the U.S. Bureau of Mines.

Imports of platinum-group metals, chiefly palladium, rose 60% in the quarter. The price of platinum continued to decline, reaching the lowest level since 1947.

Third quarter platinum sales declined 7% below those of the second quarter. Platinum sales to the jewelry and decorative trade and for miscellaneous uses were sharply higher but failed to offset the drop in metal sales for chemical, electrical, and dental and medical uses. Sales of palladium were double those of the preceding quarter, with the chemical and electrical industries accounting for nearly all of the increase. Sales of iridium, osmium, and ruthenium increased 67%, 24%, and 42%, respectively, during the quarter, but rhodium decreased 31%.

Refinery production of platinum was 9% lower but imports of refined platinum were 18% higher than in the preceding quarter. Refiners and dealers reported stocks of platinum about 3% higher at the end of the period. Palladium recovered by refiners in the third quarter declined 38% but imports rose 128%, reflecting chiefly an increased demand from the chemical and electrical industries. The government continued to acquire palladium through the exchange of surplus agricultural products by the Commodity Credit Corp. Stocks of palladium held by refiners and dealers increased slightly. Refinery production and imports of the minor platinum-group metals, iridium, osmium, rhodium, and ruthenium together in the third quarter declined nearly one-third below that of the second quarter. Stocks of these metals declined slightly, except rhodium which was slightly higher.

New and secondary platinum recovered by U.S. refiners, in troy oz.:

	1957	1958 2 qtr.	1958 3 qtr.
Platinum	86,131	8,229	7,470
Palladium	35,325	7,568	4,710
Iridium	4,099	617	442
Osmium	1,747	364	201
Rhodium	4,070	815	629
Ruthenium	3,377	801	501

U.S. imports of platinum metals, in troy oz.:

	1957	1958 2 qtr.	1958 3 qtr.
Unrefined			
Ores	1,572	...	...
Grain, nuggets	26,628	8,485	5,177
Sponge, scrap	2,129	5,239	2,613
Osmiridium	2,851	878	...
	33,180	14,602	7,790
Refined			
Platinum	306,195	46,017	54,175
Palladium	327,558	59,609	136,173
Iridium	1,431	313	421
Osmium	126	...	7
Rhodium	16,629	4,906	2,789
Ruthenium	1,864	1,427	1,402
	653,803	112,272	194,967
Total	686,983	126,874	202,757

Hungarian Magnesium Output Scheduled to Begin in 1959

Vienna (McGraw-Hill World News): The Dolomite deposits of Hungary magnesium are to serve as the basis for the Hungarian magnesium production, which is to start during 1959 to free the country from costly imports. Exports are scheduled provided the program is actually implemented, after 1960.

A small-size test processing unit was established in 1957 in Apoc, Heves district. The first industrial-sized processing unit is to be built in Apoc during the first six months of 1959, with industrial-level processing to start immediately afterwards.

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OEEC Zinc Output Off

Paris (McGraw-Hill World News): Members of the Organization for European Economic Cooperation (OEEC) produced 67,566 metric tons of refined zinc in November, 1958, compared to 68,643 in October.

Quality breakdown indicates that 26,492 metric tons of the November total were High Grade and Special High-Grade zinc, with at least 99.95% zinc content. The remaining 41,074 tons were g.o.b. and debased zinc.

OEEC zinc-producing countries are Austria, Belgium and the Belgian Congo, France, Germany, Italy, the Netherlands, Norway and the United Kingdom.

Production of zinc ores and concentrates in November amounted to 30,851 metric tons of recoverable metal content, compared to 33,023 in October. Zinc-ore producers in the OEEC area are Austria, France, Germany, Italy, Norway, the United Kingdom, Belgian Congo, Morocco and Tunisia.

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Wilson

(Continued from page 3)

integrated and nonintegrated members of the industry. Competition from extremely low-priced imports added to the problems of the domestic industry. These adverse conditions served to exercise a squeeze on profits. With demand now on the uptrend, the industry is hopefully anticipating better returns in 1959.

The outlook for copper in 1959 is one of improving shipments as a result of increased industrial activity, particularly in the manufacture of automobiles and appliances and in the expansion of public utilities. With customers no longer holding large inventories, shipments of copper this year are expected to register a gain of 10 to 15% over 1958. Prices should remain relatively stable with an ample supply of the metal available unless labor difficulties develop in the domestic industry when contracts expire at the end of June. Any significant change in the supply situation would, of course, have immediate effects upon price in this extremely sensitive industry. However, with the substantial increase in world copper mining capacity in recent years and with several additional mines scheduled to begin production during 1959, the copper supply situation is now the best it has been in years. Profits in copper have dipped considerably from 1956 highs, but the members of the industry are expected to realize greater returns in 1959 as the current price is above the average price obtained in 1958.

A modest rise of 5 to 10% is expected in lead shipments in 1959, because of moderate increases forecast in requirements for storage batteries and such metal products as lead-covered cable, solder, caulking lead, and metallic alloys containing lead. Even though an excess supply of lead exists on the domestic market, curtailments in mining and production and an import quota system based on 80% of the annual average in the five-year period 1953-1957, should help to narrow the gap between supply and demand, thereby promoting somewhat greater price stability. As in aluminum and copper, expiring labor contracts will create problems for the lead industry in 1959.

With regard to zinc, the current production-demand situation appears to be in better balance, although large stocks still overhang the market. Here too, because of an over-supply of the metal, production cutbacks were put into effect, and import quotas were imposed on the same basis as lead, namely 80% of the 1953-1957 annual average. These factors should bring supply and demand into somewhat better balance during 1959, strengthening zinc prices. Zinc shipments are expected to increase more than 10% in 1959, with expectations of a better year in autos and a higher rate of operations in the steel industry. This prediction on 1959 zinc shipments is slightly above the estimate made by BDSA during the past holiday season, primarily because the backlog of orders for galvanized sheets reportedly has been increasing in recent weeks. Since contracts involving zinc workers are scattered with respect to plants involved and time of expiration, labor problems are not expected to be a major influence on production and markets during 1959.

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–

Mineral and Ore Markets

Mercury continues at $218-23 per flask, large lots, N.Y., prompt delivery. The situation is little changed from last week with top quality spot metal selling at about $220-23; prompt metal at about $218-21; and various amounts of Mexican and South American metal available at below $218. Inquiries in general have increased, but actual demand has only moderately improved.

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OEEC Lead Output Improved

Paris (McGraw-Hill World News): Members of the Organization for European Economic Cooperation (OEEC) and associated countries produced 55,812 metric tons of pig lead in November, 1958, compared to 53,714 in October.

OEEC pig-lead producers are Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, The United Kingdom, Sweden, Morocco and Tunisia.

Production of lead ores and concentrates in November amounted to 20,906 metric tons of recoverable metal content, compared to 23,297 in October. Lead-ore producing countries in the OEEC orbit are Austria, Germany, France, and French Equatorial Africa, Italy, Norway, The United Kingdom, Morocco and Tunisia.

U.S. Zinc Consumption

	Aug. 1958	Sept. 1958	Oct. 1958
Galvanizers:			
Sheet, strip	18,206	17,956	19,531
Wire, wire rope	2,509	2,830	3,139
Tube, pipe	6,844	5,941	6,287
Fittings	811	1,126	730
Job galvanizing	2,350	2,152	2,101
Other	3,943	4,043	4,725
Total	34,663	34,048	36,513
Brass & Bronze Products:			
Sheet, strip, plate	4,010	4,766	5,986
Rod, wire	2,543	2,987	3,707
Tube	791	836	952
Castings, billets	469	388	460
Copper-base ingots	507	597	582
Other cu-base products	38	50	66
Total	8,358	9,624	11,753
Zinc Base Alloys:			
Die castings	19,020	24,634	26,697
Stamping dies, alloy rod	436	416	824
Slush & sand castings	1,376	138	161
Total	20,832	25,188	27,682
Rolled Zinc	3,379	3,458	3,845
Oxide plants	958	770	881
Other	943	1,034	1,245
Total reported	69,133	74,122	81,919
Est. unreported	900	900	900
Grand total	70,033	75,022	82,819

	Aug. 1958	Sept. 1958	Oct. 1958
Special High	24,147	29,435	32,422
Regular High	6,297	6,550	8,024
Intermediate	1,259	1,205	1,352
Brass Special	8,391	8,246	8,981
Select	38	60	202
Prime Western	28,172	28,000	29,767
Remelt	829	626	1,171
Total	69,133	74,122	81,919

Iron, Steel, and Coke

PIG IRON — Per gross ton Valley furnaces: Bessemer, $67.00, basic, $66.00 and No. 2 foundry $66.50.

STEEL — Per net ton, f.o.b. mill, Pittsburgh, billets and slabs, $80.00; Bars per 100 lb, $5.675; plates and structural shapes, $5.30@$5.50.

STEEL SCRAP — Per gross ton, delivered Pittsburgh, No. 1 heavy $42-43, No. 2 heavy $35-36. Cleveland, No. 1 heavy $39-40, No. 2 heavy $25-$26.

COKE — Per ton, Connellsville furnace, $15.25; foundry, $18.25.

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Refractories

CHROME BRICK—Per ton f.o.b. shipping point: Chemically bonded Balt. $109, Calif. $119, burned, $103.

FIRECLAY BRICK—Per M:

Super Duty	$185
High Duty	$140
Low Duty	$103

MAGNESITE — Brick, per ton f.o.b. works, 9-in. straights, $140; chemically bonded, $119.

SILICA BRICK—Per M, Pennsylvania, $163; Alabama, $158; Illinois, $168.

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Smelters' Aluminum Alloys

Delivered prices of smelters' aluminum ingot, per pound, in lots of 10,000 lb or more.

Piston alloy D132 24-25c. No. 12 alloy 21½-22c. No. 13 alloy, max. .30 copper, 24½-25¼c.

Deoxidizing grades: No. 1, 23-23½c; No. 2, 21-21¾c; No. 3, 20-20¾c; No. 4, 17½-18½c.

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A Custom Smelter Copper Price Jan. 15-21

The following prices are computed by *E&MJ Metal and Mineral Markets* from data on flat price and average price sales reported by the American Smelting & Refining Co. They refer to electrolytic copper in standard shapes.

Delivered consumers' plants	28.875c
F.O.B. refinery	28.475c

They are for sales in the U. S. market and are adjusted to the nearest one-eighth cent. A one-quarter cent deduction for selling commission has been made.

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Lead Average (Monterrey)

The net price realized by the American Smelting & Refining Co. on all of its sales of Mexican pig lead, including metal sold for consumption in Mexico, during the week ended Jan. 17, 1959, was 8.89c (U.S.) per lb. f.o.b. refinery Monterrey, Mex.

London Copper Prices

The following prices in £ sterling per long ton c.i.f. European ports are calculated by the London Metal Bulletin (see *M&MM* Feb. 13, 1958, p. 3).

Jan. 12	227.897	Jan. 15	231.651
Jan. 13	230.449	Jan. 16	232.287
Jan. 14	232.539		
Av.			230.965

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Tri-State Concentrates

Joplin, Jan. 20, 1959

(a) Blende	Per Ton
Prime coarse (60% zinc)	$68
Flotation, 60% zinc	$68

(a) Effective Nov. 7, 1958

Galena	
Coarse and flotation, 80% lead	(a) $156.12

(a) Effective Oct. 14, 1958

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Brass and Bronze Ingot

85-5-5-5 (No. 115) 28c; 80-10-10 (No. 305) 32¼c; 88-10-2 (No. 215) 35½c; Yellow (No. 405) 23c; and upward. Manganese bronze (No. 420) 24¼c.

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Smelters' Copper Scrap Prices

Custom smelters' buying prices for scrap, carload lots, refinery:

No. 1 copper and wire, 25½c; No. 2 heavy copper, 24c; light copper, 21¾c; refinery brass, 23c.

Dealers' Scrap Prices

Dealers' buying prices, f.o.b. New York or equivalent freight points, for wholesale quantities, in cents per lb.

No. 1 copper wire	23@23½
Heavy copper & wire, mixed	21@21½
Light copper	19@19½
No. 1 composition	16½@17
Composition turnings	15½@16
Light brass	10@10½
Yellow brass turnings, mix	11@11½
Heavy yellow brass, mixed	11½@12
Auto radiators, unsweated	12½@13
Brass pipe, cut	13@13½
Rod brass turnings, No. 1	11½@12
Rod ends, brass	12@12½
New soft brass clips	13½@14
Cast aluminum, mixed	9@9½
Aluminum crankcases	9@9½
Aluminum clips, new soft	13@13½
Sheet aluminum, old clean	9@9½
Aluminum turnings, clean	6½
Zinc die cast, mixed	2½
Zinc die cast, new	4
Old zinc	4
New zinc clips	5½
Soft or hard lead	8½
Battery plates	5
Babbitt mixed	9½@10
Linotype or stereotype	10½@11
Electrotype	9@9½
Solder joints close cut	13½@14
Block tin pipe	74@76
Autobearing babbitt	38@40
Monel Clips, new	32@34
Monel sheet, clean	28
Nickel, rod ends	52@55
Nickel, clippings	52@55